

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, OCTOBER/NOVEMBER – 2018**

INORGANIC CHEMICAL TECHNOLOGY

[Maximum Marks: 100]

[Time: 3 Hours]

PART-A

[Maximum Marks: 10]

(Answer *all* questions in one or two sentences. Each question carries 2 marks)

- I. 1. List two uses of lime.
2. Identify the products after calcination of sodium bicarbonate.
3. State the reaction of Sulphur dioxide to Sulphur trioxide.
4. List two uses of ammonium chloride.
5. List the applications of sodium silicate. (5x 2 = 10)

PART-B

[Maximum Marks: 30]

(Answer any *Five* of the following questions. Each question carries 6 marks)

- II. 1. Explain the process of carbonation of ammoniated brine.
2. Draw a neat sketch of Membrane cell and label the parts.
3. Summarise the reactions involved in the manufacture of nitric acid.
4. Draw a neat sketch of ammonia oxidation converter in nitric acid manufacture and label its parts.
5. Illustrate the direct neutralization method for the manufacture of ammonium sulphate.
6. Explain the removal of CO_2 in steam reforming process for the manufacture of ammonia.
7. Draw a neat sketch of rotary kiln. (5x 6 = 30)

PART-C

[Maximum Marks: 60]

(Answer *one* full question from each Unit. Each question carries 15 marks)

MODULE-I

- III. 1. Explain the constructional details and working of carbonating tower used in soda ash manufacturing process. 7
2. Explain the membrane process for the manufacturing of caustic soda. 8

OR

- IV. 1. Describe the production of bleaching powder from lime. 6
2. Explain the manufacture of aluminum sulphate from bauxite. 9

MODULE -II

- V. 1. Draw a neat flow diagram of DCDA process for the manufacture of sulphuric acid and label the equipments. 8
2. Describe the process of manufacture of nitric acid. 7

OR

- VI. 1. Draw a neat flow diagram for HCl absorber and label its parts 7
2. Explain the methods of concentrating Nitric acid. 8

MODULE -III

- VII. 1. Draw a neat flow diagram of steam reforming process of ammonia. 7
2. Explain the manufacturing process of urea by total recycle process. 8

OR

- VIII. 1. Explain the manufacturing process for Ammonium chloride 8
2. Describe the manufacturing process for single super phosphate. 7

MODULE - IV

- IX. 1. Explain the sulphate process for the manufacture of titanium dioxide. 8
2. Describe the manufacture of cement by wet process. 7

OR

- X. 1. Explain the manufacture of carbon black. 8
2. Explain the manufacture of fire clay brick. 7